THE MAC Flyer

JULY 1983

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THE MAC Flyer

For Greater Safety in MAC Air Operations

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The Winners

1983 MAC Flying Safety Writing Contest

FIRST PLACE

"The Forecast"

by Maj Michael E. Humphreys
9 SRW
Beale AFB, California

Capt Frank R. Sizemore
9 SRW
Beale AFB, California

and

2nd Lt Barbara S. Shay
350 AREFS
Beale AFB, California

SECOND PLACE

"The Link"

by Capt Clifton L. Bray, Jr.
HQ MAC/DOXS
Scott AFB, Illinois

THIRD PLACE

"Graffer"

by 1st Lt Michael A. Vinskey
50 TAS
Little Rock AFB, Arkansas

SPECIAL CATEGORY WINNER

"Out Of Airspeed, Altitude and Ideas"

by Maj Grover C. Tate (Ret)
Zihuatanejo, Mexico

HONORABLE MENTION WINNERS

"An Unheard Voice"

by Capt Charles M. Henegar
80 FTW
Sheppard AFB, Texas

"Players In A Game"

by Capt James B. Zazas
39 TAS
Pope AFB, North Carolina

"We Did It That Way In Vietnam"

by Capt Matthew J. Chappell, II.
773 TAS
Dyess AFB, Texas

"The Fifth Orange"

by Capt Roy W. Partridge
932 AAG (Assoc)
Scott AFB, Illinois

"The Fixation"

by Maj Bill Newmiller
4 MAS
McChord AFB, Washington

"Eight Ball In The Corner Pocket"

by TSgt Bruce F. Hanke
143 TAG (AFRES)
Warwick, Rhode Island

"Deep Trouble"

By Maj Edward M. Duchnowski
446 MAW (Assoc)
McChord AFB, Washington

"The Law of Limits"

by 1st Lt Mark E. Stearns
Det 10, 37 ARRS
F. E. Warren AFB, Wyoming

"I Can Handle It"

by Maj Philip A. White
4 MAS
McChord AFB, Washington

Forty-six officers, seven enlisted people, and two civilians produced 57 entries for the 1982 MAC Flying Safety Writing Contest. Most entrants are already enjoying their C.R. Terror T-shirts and all will begin their 1-year personal subscription to the *Flyer* with this issue.

Authors of the top three entries (five people in this case) will receive handsome desk sets attesting to their literary abilities. Honorable Mention winners are given engraved wall plaques. A contest-winning story will appear in each issue of *The MAC Flyer* during the next 12 months and the 1983 first-place winner starts on page 4.

Competition was keen with a wide variety of prose and poetry challenging our judges. We appreciate the exceptionally high quality of the manuscripts submitted this year and recognize the hard work that went into them. Remember, it's not too early to start planning your entry for the 1984 writing contest.

The "Forecast"

Predicting Mishaps—A Personal Experience

by Major Michael E. Humphreys, 9 SRW
Captain Frank R. Sizemore, 9 SRW
2Lt Barbara S. Shay, 350 AREFS

—Washington—Air Force safety officials predict 165 aircraft mishaps will occur this year, resulting in the loss of 81 planes based on 3.2 million flying hours. Officials said the forecast is for use by flight, operations and support organizations "to assist them in formulating priorities of action and mishap prevention programs." The aim—to prove the forecast wrong by having fewer mishaps...

The young airman standing guard at the main gate flexed his shoulders in the warm southern California sunshine and looked at the car he was waving through. It may have been the wide whitewalls that caught his eye. As the vehicle glided past him, his eyes glowed in undisguised admiration. It was a 1957 Chevrolet convertible, an American classic, restored to a glistening emerald and white, and built eight years before he was born. The driver, noticing the appreciation on the airman's face, looked back with a smile of satisfaction as he returned the airman's crisp salute.

The '57 Chevy was the foremost luxury in AF Reserve Major Jerry Dunlop's life. His complete restoration and occasional driving of the car gave him the same pleasure of creativity which an artist feels when finished with a mood-capturing landscape. He rarely drove it, but today was different. He needed his car to pacify and prepare him for the coming ordeal—his annual two weeks of active duty at the Air Force Institute for Flying Safety (AFIFS). He would also need to drive it while there, to escape from the mystifying nightmares he would endure—the ones he endured for two weeks every year.

Major Ed Randolph, Chief of the Office of Statistics Analysis and Model Interpretation at AFIFS, stared pensively at his calendar. Today was "the day." Today he would once again meet with Major Jerry Dunlop. This would start the two weeks he had come to dread; the two weeks his assistant would

First Place, 1983 MAC Flying Safety Writing Contest

manage the office. Two physically exhausting and spiritually draining weeks. It would be like other years he'd known, extremely productive, but at a great price. A price largely paid by the sensitive, gifted Jerry Dunlop. Ed Randolph had been Dunlop's primary point of contact for the past three years and had developed more than a working relationship with Jerry, closer to a kinship—the type of camaraderie men share who go into battle together. But that wouldn't make the next two weeks any easier. Going into battle was never easy.

At a glance nothing seemed unusual about the meeting between the two men in the main AFIFS parking lot. The meeting was a warm encounter between old friends with a firm handshake and trusting smiles. The tension both men felt as their thoughts turned to the days ahead was not outwardly noticeable. Ed Randolph looked admiringly at the Chevy and commented on the quality of the restoration. Finally, both men drove off together to the BOQ, and the newly-refurbished DV suite. Although Randolph did not mention it, this was at the specific direction of the AFIFS Commanding General. No, nothing unusual about this meeting.

...The Air Force Institute for Flying Safety spokesman said the forecast predicted 91 class A mishaps would occur destroying 81 aircraft. A further 74 aircraft were expected to be damaged sufficiently to qualify in the class B mishap category. Both injuries and fatalities were expected...

Ed Randolph stopped pacing and settled back on the sofa in the DV suite. Putting his feet on the coffee table, Randolph pushed his tape recorder and note pad aside. They had been back from the club for hours and Dunlop had gone straight to bed in the adjoining room. Neither had anything to drink; they would need all their faculties tonight. With bleary eyes Randolph focused on his watch—midnight. Leaning his head back, he wondered, "How much longer?"

The observer moves silently to the jumpseat and sits down. The cockpit is quiet, lit only by soft touches of instrument light. The fatigue slowing the functions of the pilot and copilot numbed him also. Twenty-three hours of a 26-hour crew duty day have expired. Plagued with maintenance problems at every turn, none of the crew had gotten any rest.

They, no, we are on the final leg approaching Diver's Grove NAS, an atoll packed with aviation research scientists, due north of Australia in the middle of the South Pacific. The aircraft is burning main wing tank fuel. The body tanks of the KC-135Q are filled with thermally stable jet fuel needed for a U-2. We're on a ferry mission.

The navigator hands the copilot the spindled weather sheet with the last ETA jotted on the back. The copilot records the time, stacks the sheet on his clipboard, and unconsciously drops the board between the throttle quadrant and his seat. As the observer tilts his head, he notes the forecast—clear skies, unrestricted visibility, calm winds, altimeter 29.30.

"Descent check," calls the pilot on interphone.

Methodically picking up the checklist, the copilot says softly, "Review the approach." The pilot calls out the page number and begins his routine recital of obligatory items. No ILS. The PAR is out. We'll do a TACAN approach to a visual final. No sweat. Navy D.G. approach interrupts his litany. "D.G. is currently carrying 25,000 thin scattered, visibility unlimited, wind calm, altimeter... Standby one. Altimeter is 30.29."

The copilot reads back the altimeter. The pilot, while computing his descent gradient, replies, "That checks: forecast....30."

As he resumes his approach briefing, the copilot asks, "Still want to call metro?"

"Nah, it's clear and a million."

The pilot completes the approach briefing, mentioning the MDA, rate of descent on final, missed approach instructions and lost communications procedures. Lastly, he remarks on the landing illusions associated with a night approach over water and instructs the crew to closely monitor his altitude.

The observer—the witness—waits. He is tired. They're all tired.

Cleared to 5,000, the crew starts down. The navigator and copilot set 30.29. Finally, after some prodding, the pilot sets 30.29. "Descent checklist complete." The boom operator crosschecks altimeters; all read the same. He's content.

Miles ahead, the crew can pick out a speck

of light which must be the airfield. The night is moonless—black as a descent into hell.

Something's wrong. What was that altimeter setting? From the jumpseat he can no longer see the weather sheet. What was it? Something's wrong!

Descending into infinity. The pilot picks up the course coming across and starts to follow the profile view depicted on the approach plate. Where's the weather sheet? What was the altimeter setting? The copilot is just staring at the instruments.

There's the weather sheet, under the enroute supplement. What's the setting? Wait! Forecast 29.30. What! Approach told us

Jerry Dunlop woke up screaming. "It's started."

30.29. Check the setting! The navigator's eyes close momentarily. The pilot levels off at the FAF altitude, 1,500 feet.

Wait, check the altimeter...the altimeter!

Six DME. The pilot calls gear down at the FAF, "Descending to 460, crew. Flaps 40." The copilot is slow to respond.

The pilot struggles with his prebriefed 1,000 feet per minute rate of descent. His crosscheck stagnates. We have drifted a half dot left of course.

The rate of descent is now stabilized at 1,000 feet per minute. The pilot is concentrating on correcting back to course—nailing that CDI. Oh, God! The altimeter!

The pilot is preoccupied. The copilot is entranced.

The observer, now detached, sees the impact—the spray—the debris—the bodies. The thunder rings in his ears.

Jerry Dunlop woke up screaming.

The initial scream caught Randolph by surprise, waking him instantly. "My God," he thought, "it's started."

It was several moments before the ashen-faced man came to the door, drenched with sweat. Randolph stood silently while Dunlop collapsed from exhaustion on the sofa. It was several more minutes before Dunlop could speak, and then only in a whisper. "It was a -135," he began. "They got a wrong altimeter setting and took it into the water on final."

An hour later, as Ed Randolph feverishly copied what the tape recorder revealed, Jerry Dunlop staggered back to his bed. He straightened the covers and laid down, attempting to relax. Staring into the stark darkness, Dunlop couldn't get his mind off the KC-135Q disaster.

It took a long time before Dunlop stopped tossing and turning in his bed, and resumed his deep, rythmic breathing. The tenseness in his muscles began to flow from his body as he slipped into a deeper, calmer state of sleep. He rolled over onto the fresh, cool side of his pillow. Ed Randolph, in the outer room, started his fourth pot of coffee in as many hours.

Slowly the observer moved forward from the back of the aircraft. A C-130 filled with cargo and passengers. Slowly, carefully, reaching out—feeling, tasting, sensing the ebb and flow of the human currents around him. A couple traveling together. A bored duty pax. Two sleeping children.

Up to the flight deck. A slightly different tang in the air. Where are we? Look at the navigator's chart. Over the Mediterranean. What's happening in the cockpit? Conflict in the air. Radar's dead; kaput. Thunderstorms embedded in the cirrus spread across their flight path.

"Pilot, nav. I don't see any way around those."

"I think we can make it, nav. There's a break to the right. Looks pretty clear."

Dunlop can sense the tension; taste the scared arrogance flowing from the left seat, afraid to turn around and go back to Pisa.

"Pilot, nav. With no radar I don't think we ought to try to penetrate that stuff. We're flying right at the freezing level. Look, it's a minus six."

"Well, Roma wouldn't approve higher. Copilot, tell them we're deviating for weather."

"Did you see that?" The copilot is now alive! "Lightning, cloud-to-cloud at 10 o'clock."

The pilot sees it. Dunlop can feel the surge, the tightness, the dry lips, the sweating palms. Tension!

"That's OK. We're turning away from it. We're headed toward a clearer area."

"Pilot, nav." Dunlop can see the look on the nav's face, the set of his jaw. He speaks

in slow, measured tones as though explaining something of great complexity to a child. "Pilot, it's your decision. But we don't have any radar, and we don't know what's out there behind that line. Could be another line. We're right at the freezing level in the worst possible zone for a lightning strike. We've just seen a bolt off to our left and that proves the conditions are right. We may be setting ourselves up."

There was no immediate response from the left seat. The pilot stares straight ahead as though lost in a private reverie. He finally says, "Let's press."

The observer sees the impact and the thunder rings in his ears

Suddenly Dunlop found himself lying in his bed in the DV quarters. He had kicked off the covers. He was cold and his mouth was very, very dry.

Randolph woke with a start when he heard water running in Dunlop's bathroom. Immediately alert, he readied his tape recorder and note pad. Dunlop opened the door slowly, walked quietly across the room and sank down on the sofa. "He looks like an old man," thought Randolph. "It's taking its toll. This must have been a particularly bad one."

Dunlop wiped the perspiration from his face and what may have been tears from his eyes. "It was a C-141." he finally said. "They just flew it into the ground. Miscopied an altitude clearance. They were all so young. Both pilots were lieutenants."

"Before that it was a C-130 in the Med. They were just asking for a lightning strike, but I don't know how it came out." As Ed Randolph asked the leading questions, striving for every detail, Jerry Dunlop continued to recount the events of the evening. After an RF-4 birdstrike incident, Dunlop buried his head in his hands, totally spent. Softly, he began to cry.

Night after night the drama continued. Night after night Jerry Dunlop lived through an unfolding panorama of aircraft and aircrews in trouble—plunging many into chaos, destruction and death.

...Air Force officials said that 39 class A mishaps will be related to "operational factors" and 38 to maintenance, design and other logistics items. Weather and miscellaneous factors are predicted to cause four mishaps.

The type and number of mishaps expected for this year are: collision with ground, 19; control loss (pilot induced), 15; takeoff/landing (pilot), 8; engine failure, 16; flight control, 6; aircraft fuel, 2; landing gear, 4; electrical, 4; structural, 3; bleed air, 1; hydraulics/pneumatics, 1; and miscellaneous, 4—for a total of 81...

Major Ed Randolph's eyes rested briefly on the lone figure sitting behind the mahogany desk and reading his report. The day was gloriously bright, in stark contrast to the last four when the valley had been covered by a blanket of smog. The morning sunlight streaming into the room highlighted the single star on each shoulder of the man behind the desk.

Protocol required Randolph remain seated until the general was through reading his account of the accidents predicted for the following year. He did not, partly out of a sense of coming down from the intensity of the last two weeks, and partly because he had been in that office so many times before. Randolph had established a certain rapport with the man behind the desk. He took the small liberty of stepping quietly to the window of the spacious office where he could view majestic Mount Baldy.

Behind him he heard a despairing sigh from the general. He didn't turn around. Quietly, the man behind the desk joined him and stood silently while they looked at the San Gabriel mountains. The sense of loss both men felt did not have to be put into words. Each knew by the other's stance, expression of the face, tilt of the head.

"Well, Ed, I guess it's not too bad. Statistically, that is. Not as good as we had hoped, but not too bad. In fact, if I could look at it strictly from the statistical point of view, there might even be an element of encouragement. But seeing it through Jerry Dunlop's eyes, it's an incredible loss of people and material. What a tragic loss of life."

"Yes, sir. Men and women with families. Children growing up without a parent. A lot of it needless."

The general turned slightly and fixed his

eyes on Randolph. "Do you think Dunlop is accurate this time?"

"Always has been," Randolph replied.

"Then all these accidents are going to happen? All these people will die?"

"No, sir. Not necessarily. I don't think so and neither does Dunlop."

"Then what can we learn from our efforts?" the general asked earnestly.

"Well sir, throughout the year aircrews will be placed in hazardous situations which will

"Pilot, it's your decision. But we don't have any radar"

demand the very maximum in crew ability. They will find themselves 'in a box' through either mechanical failure, human factors, or weather. Whether or not they get out of their predicament successfully will, for the most part, depend on the crews' responses. Of course, there are mechanical failures from which no one can recover—like the inflight wing failure of the B-52 you read about. Then there are the accidents where you just wonder why—like the F-4 pilot at RED FLAG who is so busy evading agressor F-5s that he rolls inverted and pulls into a mountain. But there were many situations which Dunlop experienced where he didn't see the ending. It's as though the outcome depends on the crew's actions."

"So, the lesson here is that the most important link in the chain is still the aircrews?"

"Yes sir. Just as it's always been," Randolph concluded.

"OK. Go ahead and prepare the formal announcement, and we'll run it through the staff on Monday."

"Yes sir."

Jerry Dunlop drove slowly toward the gate with the convertible top down, recovering from the intensity of his experience. He basked in the sunshine, soaking it up as a cave dweller might have after emerging from a long seclusion in darkness.

It had been a grueling, demanding two weeks, far worse than he ever remembered. His experiences had stripped him totally—emotionally and physically. To be present at—no, to be deeply, intimately involved with the living and dying of men and women, had an incalculable impact on his psyche. He felt ravaged.

Overhead, a C-141 was climbing out. He wondered idly where it was bound, whether it was the aircraft where he had stood on the flight deck, shared the jumpseat unobserved by the crew. He hoped not.

It may have been the sparkle of the metallic paint that caught the young airman's eye and made him smile as the '57 Chevy passed the main gate in the outbound lane. As the car slipped out of view, the guard briefly shut his eyes, the sun enveloping each contour of his face, and imagined himself behind the steering wheel of the classic he'd only heard about. The driver, Jerry Dunlop, accelerated to meet the open highway and noticed the glorious day.

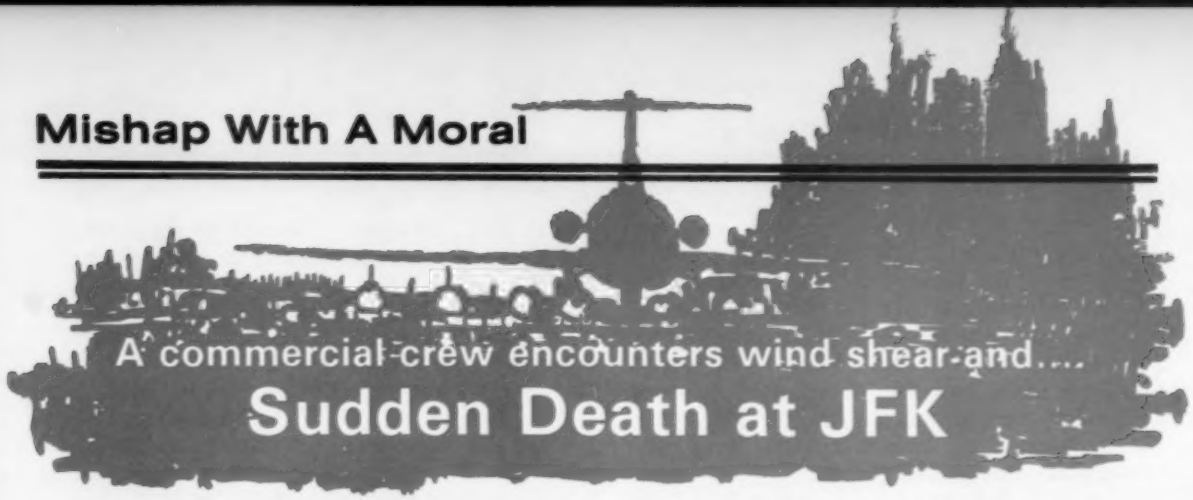
It was a beautiful day to relax in the inner sanctum of his cabin at San Jacinto or make a long-overdue and much-needed visit to his brother's home in Carpenteria. He took time deciding where he would go, for he relished the fact that his mind was filled with such a simple matter. His ordeal was over; for others, it was just beginning. ★

Left to right: Capt Frank R. Sizemore; 2Lt Barbara S. Shay; and Major Michael E. Humphreys.

ABOUT THE AUTHORS

Major Michael E. Humphreys is a 9th Strategic Reconnaissance Wing (SRW) (SAC) KC-135Q stan-eval flight commander and pilot. He is a previous winner in MAC Flying Safety Writing Contests, 1st place in 1974 and 1977, and honorable mention in 1976. Captain Frank R. Sizemore is a 9th SRW KC-135Q instructor pilot. Second Lieutenant Barbara S. Shay is a 350 Air Refueling Squadron KC-135Q copilot. The authors have flown together frequently as SAC crewmembers at Beale AFB, California.

Mishap With A Moral



A commercial crew encounters wind shear and....

Sudden Death at JFK

A typical summer day in New York City, Tuesday, June 24 dawned clear and sunny. As the day wore on, though, the atmosphere became warm and muggy with clouds building into the almost inevitable late afternoon thundershowers. By 1300 local, the sky was partially obscured and the visibility close to 5 miles. Three hours later, the sky was dark and threatening with thundershowers in the vicinity of New York's JFK International Airport. A few minutes after 1600, a severe thunderstorm was moving just to the northeast of JFK with occasional cloud-to-ground lightning, strong winds and heavy rain.

Eastern Airlines Flight 66 (EAL 66), a scheduled flight from New Orleans, had arrived in the New York terminal area at about 1535. The crew of the Boeing 727 copied the latest JFK ATIS information. "Kennedy weather, VFR, sky partially obscured, estimated ceiling 4,000 broken, 5 miles with haze...wind 210° at 10, altimeter 30.15." At 1552, the arrival controller working EAL 66 told all aircraft on his frequency, "we just went IFR with 2 miles in very light rain showers and haze....EAL 66, descend and maintain 4,000. Kennedy Radar 132.4."

The severe thunderstorm which was moving through the JFK area had now reached a point that straddled the ILS final approach course for runway 22L. Still, aircraft continued to land, the wind showing only 7 knots right down the runway. None of the aircraft had been issued the National Weather Service strong wind warning for gusty surface winds of up to 50 knots in the New York area, valid from 1600 to 2000. This information, although passed to the controllers, was never relayed to the crews trying to land at JFK.

At 1557:30, a Flying Tigers Line DC-8 had just landed on 22L and cleared the runway when its captain told the controller what he and his crew had just experienced.

"I just highly recommend that you change the runways and...land northwest, you have such a tremendous wind shear down near...the ground on final."

"Okay, we're indicating the wind right down the runway at 15 knots when you landed," replied the local controller.

"I don't care what you're indicating!" the Flying Tigers captain retorted, "I'm just telling you that there's such a wind shear on the final on that runway, you should change it to the northwest!" This time, there was no response by the controller. But at 1557:55, the controller issued missed approach instructions to EAL 902, an L-1011 that had just gone through the wind shear.

"Was wind a problem?" asked the controller.

"Affirmative," replied the EAL 902 crew. "We had a pretty good shear pulling us to the right and...down."

"Okay, the shear you say pulled you right and down?"

"Yeah," the crew came back, "we were on course and down to about 250 feet. The airspeed dropped to about 10 knots below the bug and our rate of descent was up to 1,500 feet per minute, so we put takeoff power on and we went around at a hundred feet."

Mishap With A Moral

Following EAL 902 on the approach were Finnair 105, a DC-8, and N240V, a Beechcraft Baron. In a later interview with these pilots, each stated that they, too, had encountered significant airspeed losses and increased rates of descent. They had, however, been able to cope with the problems on the approach because they had increased their airspeed substantially, thereby compensating somewhat for the suspected wind shear. Neither pilot, though, had reported those conditions to the final controller either during or after their approaches.

The crew of EAL 66, having heard the comments by their fellow airmen on EAL 902 (it was on the EAL 66 cockpit voice recorder), tried to make allowances for the suspected wind conditions. The first officer (F/O), who was to fly the approach, said he would "...keep a pretty healthy margin on this one (add some extra airspeed). In case he's right." At 1603, EAL 66 reported the outer marker inbound to the tower controller and was cleared to land.

The Approach

At 1603, the first officer flying the Eastern 727 requested 30° of flaps. About a minute later, the flight engineer called "1,000 feet," and the sound of rain was recorded on the CVR. Thirty seconds later, the flight engineer called "500 feet," and the airspeed was fluctuating between 140 and 145 knots. The windshield wipers were on. Ten seconds later, the captain reminded the first officer to, "stay on the gauges," as the airspeed fluctuated between 140 and 148 knots. The F/O replied, "I'm right with it." A gear check was also made among the cockpit crewmembers at this time.

At 1605, the captain announced, "I have approach lights," the F/O replying, "Okay." A couple of seconds later, the captain again reminded the F/O to, "Stay on the gauges," and again the F/O said, "I'm with it." At this time EAL 66 was passing through 400 feet and its descent rate had increased from an average of about 675 feet per minute to 1,500 feet per minute. The 727 began to go rapidly below the glide slope as the airspeed decreased from 138 knots to 123 knots in about 2½ seconds.

EAL 66 continued to go further below the glide slope and was 150 feet AGL when the captain said, "runway in sight." Less than a second later, the F/O said, "I got it." The captain asked, "Got it?" At 1605:10, an unintelligible exclamation was recorded, and the F/O commanded, "Takeoff thrust." The first sounds of impact were recorded at 1605:11.

EAL 66 first contacted the top of the number 7 approach light tower approximately 27 feet above the water level, 2,400 feet from the threshold of 22L. The mortally wounded Boeing rolled into a steep left bank between towers 9 and 10, and then hit the ground. Near the number 13 tower, the aircraft changed direction, struck the numbers 13, 14, 15, 16 and 17 towers, and continued on to Rockaway Boulevard where it came to rest.

Fire erupted after the left wing failed and released fuel as the aircraft skidded through the approach light towers. As the fuselage began to break up, more fuel spilled and added to the fire. Fire trucks reached the wreckage about 2 minutes after the crash, and the fire was extinguished shortly after that. A number of small fires were doused with portable extinguishers. Nine passengers who ultimately survived were saved as a direct result of the fire department's prompt actions, having been found lying in pools of fuel and fire extinguishing foam.

Of the original 16 survivors, two died shortly after arriving at the hospital. Two others died within 5 days, and one passenger died 9 days later. Of the 124 people aboard EAL 66, 9 passengers and 2 flight attendants survived the crash.

Analysis

As you've probably already surmised,

EAL 66 was the victim of wind shear. Specifically, it was the victim of an intense downburst of wind and rain which caused the crew to lose control and crash due to loss of airspeed and excessive descent rates. After the crash, the NTSB conducted a thorough investigation into the last flight of EAL 66. The investigators looked closely at every aspect of the flight, the air traffic control system, the plane itself—no probable area was left untouched. At the forefront of the investigation was the comparison of the flight data recorders (FDR) of EAL 66, EAL 902 and Flying Tiger 161.

By using these FDRs, a wind model, defined by the vertical and horizontal components of the wind, was established as a function of altitude and FDR-time base. From a thorough analysis of this model, it appeared that EAL 902 and EAL 66 encountered similiar conditions, the exception being that EAL 66 encountered the conditions closer to the runway threshold.

The analysis of the model showed that EAL 66 probably encountered an increasing headwind as it descended on the ILS. The wind changed from about a 10-knot headwind at 600 feet AGL to a 25-knot headwind at 500 feet. As it descended through 500 feet, EAL 66 encountered a downdraft with peak speeds of about 16 feet per second. Passing through 400 feet, the intensity of the downdraft increased to about 21 feet per second, and the headwind suddenly decreased from 20 knots to approximately 5 knots in about a 4-second period. This is the point EAL 66 went rapidly below the glide slope and continued to descend to the ground as the downdraft diminished and the headwind component continued to decrease.

To further analyze these points, 14 commercial pilots participated in simulator tests, each flying several approaches similar to EAL 66's flight path. The weather conditions were based on models of the weather at JFK on the fateful day. Of the 54 total approaches flown, 18 reached an altitude corresponding to an impact with the approach lights. Thirty-one successful missed approaches were flown, and 5 approaches resulted in conditions from which a safe landing could have been accomplished.

The actions of the pilots involved in the test were also worthy of comment. Although told to "go visual," any attempt to simulate surprise was futile, for the pilots hesitated to switch from instruments to visual cues. Those pilots who flew approaches to light-tower impact were reluctant, when adding thrust, to interrupt their instrument scan to verify that engine power was indeed up. Consequently, most added less thrust than they thought, and not enough to effect a successful missed approach. Also, several pilots didn't rotate the nose of the aircraft to the pitch attitude commanded by the flight director, needed to stop the high descent rate. Generally, the attitude change needed to complete a successful missed approach was about 9° for the Boeing 727.

Probable Cause

The NTSB determined the probable cause of this accident to be the aircraft's encounter with adverse winds associated with very strong thunderstorms located astride the ILS localizer course. This resulted in a high sink rate into the non-frangible approach light towers. The delayed recognition by the flight crew and their delayed correction of the high descent rate were probably associated with their reliance upon visual cues rather than on flight instruments. Even then, the downdraft and wind shear may have been too severe to overcome even if they had been able to recognize the indications and take the proper actions. Contributing to this tragedy was the continued use of runway 22L when it should have become evident to both air traffic controllers and flight crews that a severe hazard existed over the approach course.

Since this accident, many innovations and improvements have been made in the detection and warning of low-level wind shear. Still, without prompt and proper attention, wind shear will continue to cause tragedies. ✈

--Adapted from NTSB AAR 76-8.

Hostile Environment Training

The 463d TAW prepares its crews for combat

by Major James G. Gibson II
96 BMW Public Affairs
Dyess AFB, Texas

Conditions at An Loc, South Vietnam, in April 1972, were grim. At one point, North Vietnamese "bad guys" had the outpost's 8,000 defenders completely surrounded and were pouring on the heat. There was only one way to get badly needed supplies and ammo to the besieged defenders—a C-130 airdrop.

Captain Bill "Budda" Caldwell and his C-130 crew were number three in a three-ship formation sent to deliver the goods. Their Herk carried 30,000 pounds of ammo scheduled for the airdrop. Unfortunately, poised like spiders in their webs and waiting for the lumbering transports' arrival, were three enemy anti-aircraft positions about 3,000 yards from the DZ.

Everything went like clockwork until the 5-second warning, and then all hell literally broke loose inside Caldwell's plane. Suddenly, the aircraft was turned into a searing, hotter-than-Hades blast furnace. The captain glanced to the left and was confronted with shattered windows. Looking to his right, he saw the engineer slumped in his shoulder harness heat throughout the Herk were unbearable—a ruptured bleed air duct was pumping 625° F air into the cargo compartment at something close to 125 psi!

At the loadmaster's urgent request, two pallets of ammo were jettisoned, and both exploded mere seconds after clearing the ramp and door. Then, as if there weren't enough problems, the number 1 engine fire warning light illuminated. Caldwell had no sooner caged it and fired the bottle when number two joined its left-wing partner. With two engines now feathered, the flight engineer mortally wounded, a third engine losing power, the loadmaster battling a blaze which had subsequently broken out in the left wheel area and the cockpit still as hot as Dante's Inferno, Caldwell nursed the beaten and battered Herk back to Tan Son Nhut AB and landed safely.

Even though he survived that disastrous flight, Budda Caldwell did some thoughtful "Monday-morning quarterbacking," and came to the conclusion that neither he nor his crew had been mentally prepared for such a calamity. The crew had basically been operating in a combat zone with a "flagpole mission" mentality—until, he concluded, they were hit by triple-A! Determined never to forget the valuable lessons learned the hard way, or let them go to waste, Budda filed them in his memory for future reference.

HET—Memories Recalled

The opportunity to recall those vivid memories and put his experience to some beneficial use came last year. The occasion was the implementation of a program called the Hostile Environment Training, or HET for short, for members

of the 463d Tactical Airlift Wing at Dyess AFB, Texas. As chief, wing tactics and techniques branch, now Major Caldwell and his staff were given the mandate of developing a program which would provide aircrews with training and experience under a variety of simulated but realistic combat situations.

What resulted was a fast-paced, 5-day course of classroom instruction and actual flying training. In a nutshell, HET is aimed at changing the mindset of C-130 airlifters from "flagpole" flying into thinking about ways they might have to handle a variety of combat-related obstacles to safely accomplish their mission. A class normally consists of one crew from each of the wing's three squadrons. Present mission demands limit the number of classes to one per month. "With the extremely heavy tactical airlift workload, we're lucky to get three crews at one time for the whole 5 days," commented Major George C. Player, 463d chief of tactics.

Classroom subject material the first 2 days runs the gamut from what fighters can and can't provide for a C-130 in hostile territory, to the finer points of combat mission planning under pressure. The latter is an area which receives a great deal of attention. Two important objectives are teaching aircrews to become self-sufficient under austere, often hostile conditions, and how they can best interface with and meet the needs of tactical airlift's biggest user—the U.S. Army. Crews are familiarized with such things as understanding the UTM coordinate system and incorporating intelligence information into their planning. They are also refreshed on taking advantage of "terrain masking" for protection while flying over hostile territory.

One of the main frustrations of the program, according to the students, is never being allowed sufficient time for leisurely mission planning. This stress inducer is purposely designed into the curriculum to create some of the atmosphere of tension and pressure which occurs in a real combat situation, according to Major Player. "Our goal is to force crewmembers to learn to work together under pressure and take maximum advantage of everybody's expertise," he explained. "It's not possible for a crew to accomplish all their mission planning in good order without getting organized and helping each other."

Crew coordination becomes even more critical during the flying phase of training. Enroute changes to various mission parameters, such as the route of flight, the destination, or the enemy threat, are frequently "sprung" on a crew by one of the instructors when they least expect it. They must quickly regroup, replan and "cooperate to graduate." The scramble a crew goes through during a typical problem is quite an eye-opener, according to Captain Bill Hood, chief, combat navigation section.

An even more intense motivator for crew coordination comes with the HET program's efforts to awaken crewmembers to some of the unique psychological and physiological complications that crop up in a combat situation. "We

cover things like the shock and panic which can occur in the cockpit," said Major Player. Some of the problems typically touched on include: individual reactions to the sudden loss of a fellow crewmember; establishing priorities during a serious inflight emergency; and effective use of remaining crewmember resources following a hostile-fire crisis. During flying missions, the importance of having a "Plan-B" in mind for emergencies is brought home quickly and dramatically when the instructors declare various crewmembers "dead," leaving the rest of the crew to complete the mission the best way they can.

Both pallets of ammo exploded seconds after clearing the ramp and door

Citing a concrete example, Major Player said, "It's pretty nice to have a flight engineer who knows how to map read if the navigator or copilot is out of action." Since survival is the name of the game, crewmembers are encouraged to learn as much as possible about each other's duties so they can take up some of the slack, if necessary, in a crisis. In addition, the shock of losing a fellow crewmember inflight, which includes the trauma of your snug little cockpit being violated by hostile fire—even when the whole event is simulated—has proved to be quite a learning experience for crews.

Captain Hood recalls often seeing "...experienced navs and pilots get temporarily lost because of the shock and confusion." Hood added that somebody has gotten totally lost at some point during the four flying missions in just about every class so far and had to be bailed out by their instructor who was keeping track of the aircraft position.

Multiple inflight disasters and distractions, such as a major aircraft malfunction coupled with the loss of a crewmember, have had curious effects on some people. Sometimes common sense responses to problems are completely overlooked by flustered students in pursuit of less ideal remedies. Major Player recalled one such incident during his own introduction to HET. He was the aircraft commander, but had been declared "dead" during a simulated wing fire. Somehow, the copilot locked onto the idea of making it all the way to Robert Gray Army Air Field to land, bypassing several suitable alternates along the way. Despite the instructor's continued warnings the simulated blaze was becoming more and more severe, the intrepid copilot headed on single-mindedly toward Robert Gray AAF. Finally, the wing "burned through" and the C-130 suffered "catastrophic failure." The idea of landing safely at someplace short of the original destination just couldn't penetrate the young flyer's overloaded circuits. He pressed on until it was too late, even though the logical move was to get the sick Herk on the ground ASAP, and places to do so were available. "We hope if he ever encounters something like that for real, his HET experience will help him think more clearly," Major Player stated.

Even though the crises are all simulated, there is a certain added element of risk during the flying phase of HET, and the program's creators have incorporated special safety measures to keep bogus emergencies from getting out of hand. "For one thing," explained Major Player, "we make it clear to students they should call a halt to any simulated situation or maneuver anytime they feel they are getting close to exceeding their capabilities." In addition, *each* student is monitored closely by an instructor who has been through the course himself.

"We also emphasize the importance of such precautions as paying careful

attention to safety procedures and performance limitations peculiar to the C-130 during 'confidence maneuvers' and runs against the Army anti-aircraft sites at Fort Hood," emphasized Major Player. "We don't do practice stalls in the aircraft," he continued, "but we do discuss them so the students can at least be familiar with the margins of safety."

"Cockpit discipline and flying safety are top priority items throughout HET," stated Captain Bob Ain, who is currently serving as officer in charge of the program.

Day 5 is spent back in the classroom covering such information as tips on keeping a C-130 flyable in a combat area by working around maintenance difficulties which would normally stop the Herk in its tracks in a peacetime environment. Windmill starts, how to remove and pad a generator, and helping the loadmaster with a combat offload are all part of the agenda. Aircrews are also debriefed by the TALOs (Tactical Air Liaison Officers) who show them videotapes of their performance during certain maneuvers and suggest ways they might have done better.

Another academic area covers information about the enemy threat and what to expect in the way of weaponry and tactics that may be used against the C-130 during combat. HET even covers the worst case scenario, where the aircraft is forced down and the crew is captured by the enemy. Captain Dick Fulton, a C-130 aircraft commander and the instructor for this block of training, has unusually valid credentials for discussing the trials and tribulations of a POW. He spent time as a "guest" of the North Vietnamese during America's involvement in Southeast Asia. "We're going to tape his session," indicated Major Player, "so we can have it to use if Captain Fulton goes PCS."

After all the classroom time and compressed flying schedule, the three aircrews finish up the week tired, but hopefully much wiser. Enthusiasm among graduates of the 463d's HET program runs high. Speaking as an alumnus himself, Major Player voiced strong praise, "Of all the flying training courses I have attended—and I've logged 3,500 hours since I've been in the Air Force—this is the best training I've ever received!"

Different elements of the 463d's HET course have also proven useful to other organizations, including several USAF Reserve C-130 wings, the Combat Air Training School at Nellis AFB, and even an Army aviation unit that flies reconnaissance birds. A recent review of the program by Headquarters MAC rated it "...comprehensive and well organized...," and said it would be applicable, with minor modifications, to all tactical airlift units. "We would like to have the resources to make it about 2 weeks long," said Major Player, "but, hopefully, in the short and highly compressed format we have now, we at least expose our C-130 crewmembers to experiences which will stimulate them to go and learn more on their own."

Pinpointing the program's Project Warrior-oriented reason for being, Captain Ain concluded without pulling any punches, "The time to get ready is today. If you wait until the first day of a war to start, you're dead!"

ABOUT THE AUTHOR

Major Jim Gibson is presently the 96th Bomb Wing Public Affairs Officer at Dyess AFB, Texas. From 1978 until 1981 Major Gibson served as the Supervising Editor of *TMF*. A master navigator with 6,500 flying hours, Major Gibson has flown C-124, C-133, C-5, and C-130 aircraft. Major Gibson is a freelance writer in his spare time and has recently been published in *Airman*.

THE MAC

ROLL O

MAC Unit Accident-Free Flying-Hour Milestone Award

(As of 31 Dece

700,000 Hours
76 MAS

500,000 Hours
14 MAS
375 AAW

450,000 Hours
6 MAS
75 MAS

400,000 Hours
3 MAS
4 MAS
137 TAW

350,000 Hours
1 MAS
86 MAS

300,000 Hours
57 MAS
58 MAS
89 MAW

250,000 Hours
53 MAS
60 MAW
63 MAW

200,000 Hours
9 MAS
433 TAW (AFRES)
445 MAW (Assoc)
446 MAW (Assoc)

150,000 Hours
16 TATS
136 TAW (ANG)
315 MAW (Assoc)
403 RWRW (AFRES)

120,000 Hours
64 TAS (AFRES)
1402 MAS

100,000 Hours
1 HS
15 MAS
34 TATG
36 TAS
55 WRS
96 TAS (AFRES)
97 MAS
156 TAS (ANG)
183 TAS (ANG)
185 TAS (ANG)
303 TAS (AFRES)
312 MAS (Assoc)
313 MAS (AFRES)
327 TAS (AFRES)
436 MAW
443 MAW
1400 MAS
1401 MAS

AC Flyer

OF HONOR

MAC Unit Accident-Free Flying Year Milestone Award

December 1982)

30 Years or More

1 MAS
64 TAS (AFRES)
76 MAS
303 TAS (AFRES)
327 TAS (AFRES)

25 Through 29 Years

1 HS
6 MAS
14 MAS
96 TAS (AFRES)
183 TAS (ANG)
312 MAS(Assoc)
731 TAS (AFRES)

20 Through 24 Years

3 MAS
Det 11, 39 ARRW
Det 1, 40 ARRS
Det 5, 40 ARRS
Det 18, 40 ARRS
54 WRS
57 MAS
63 TAS (AFRES)
75 MAS
97 MAS (Assoc)
130 TAS (ANG)
137 TAW (ANG)
156 TAS (ANG)
167 TAS (ANG)
180 TAS (ANG)
185 TAS (ANG)
301 ARRS (AFRES)
303 ARRS (AFRES)
305 ARRS (AFRES)
313 MAS (Assoc)
328 TAS (AFRES)
403 RWRW (AFRES)

10 Through 19 Years

4 MAS
9 MAS
11 AAS
16 TATS
31 ARRS
36 TAS
Det 5, 39 ARRW
Det 15, 39 ARRW
Det 6, 40 ARRS
Det 22, 40 ARRS
53 MAS
53 WRS
55 ARRS
55 WRS
58 MAS
Det 9, 67 ARRS
68 TAS (AFRES)
71 ARRS
73 AAS (Assoc)
86 MAS
94 TAW (AFRES)
95 TAS (AFRES)
135 TAS (ANG)
136 TAW (ANG)
139 TAS (ANG)
142 TAS (ANG)
143 TAS (ANG)
144 TAS (ANG)
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158 TAS (ANG)
164 TAS (ANG)
181 TAS (ANG)
187 TAS (ANG)
300 MAS (Assoc)
301 MAS (Assoc)
304 ARRS (AFRES)
315 MAW (Assoc)
326 MAS (Assoc)
335 MAS (Assoc)
337 TAS (AFRES)
356 TAS (AFRES)
357 TAS (AFRES)
375 AAW
445 MAW (Assoc)
446 MAW (Assoc)
459 TAW (AFRES)
700 TAS (AFRES)
701 MAS (Assoc)
707 MAS (Assoc)
708 MAS (Assoc)
728 MAS (Assoc)
729 MAS (Assoc)
730 MAS (Assoc)
732 MAS (Assoc)
756 TAS (AFRES)
758 TAS (AFRES)
815 WRS (AFRES)
932 AAG (Assoc)

Excellence in Airmanship

Left to right: Capt William H. Cole, FEAC; 1Lt Mark L. Sime, CP; and MSgt George M. Richardson, FE.

Captain Cole and crew, 67 ARRS. Captain Cole and his HH-53 crew were flying a routine training mission, practicing simulated search and rescue procedures near RAF Woodbridge, England. They had completed the navigation portion of the mission and were preparing to enter the water training area where a simulated survivor was to be located and rescued. Prior to entering the area, the crew conducted a single point power check to ensure the engines produced the minimum acceptable power for operations over salt water. Both engines checked good and the helicopter entered the search area.

First Lieutenant Sime, the copilot, took the controls approximately 8 minutes prior to beginning the hover work. Arriving at the location of the simulated survivor, Lieutenant Sime flew two patterns, then made an approach to a 50-foot hover. The throttles were full forward and rotor RPM was 105 percent.

After the hover was established, the flight engineer, Master Sergeant Richardson, stood in the crew door and gave hover instructions for the simulated hoist. During this time the copilot allowed the helicopter to settle slightly, but Captain Cole advised him of the altitude loss and instructed him to return to the 50-foot hover altitude.

As Lieutenant Sime began to increase collective and add power, the crew heard a loud bang accompanied by a yaw kick. Captain Cole immediately assumed control of the HH-53 and quickly called out the bold face procedures for engine failure. Lieutenant Sime completed the emergency procedures as Sergeant Richardson returned to the cockpit to assist.

At this time the helicopter began to settle toward the water and Captain Cole added power on the good engine via increased collective. There was no power assist from the failed number 1 engine, which apparently froze immediately after the failure. Noting the

rotor RPM drop to 95 percent, Captain Cole lowered the collective slightly to prevent the RPM from drooping any further, and then very slowly began to ease the cyclic forward to get flying airspeed. Because the aircraft did not "feel" like it would contact the water, he continued to gain forward airspeed while the flight engineer dumped fuel to lighten the helicopter's weight. Since the aircraft was under control, Captain Cole decided not to jettison the tip tanks. The HH-53 passed through translational lift at less than 25 feet above the water, then rapidly began to gain both altitude and airspeed.

The total time from engine failure to achieving translational lift was a matter of seconds, and safe altitude and airspeed were reached in less than a minute. Later calculations revealed the HH-53 barely had single-engine hover capability at the time of the engine failure, but once the rotor RPM drooped to 95 percent, even that luxury no longer existed. That the helicopter was flown out of the situation was due solely to the skill of the pilot and exceptional crew coordination.

The outstanding performance of Captain Cole and his crew saved the Air Force a valuable aircraft and prevented the loss of life or injury to themselves. They clearly demonstrated their "Excellence In Airmanship."

Major O'Neil and crew, 50th Tactical Airlift Squadron, Little Rock AFB, were flying a C-130 on a night airland mission during their wing's operational readiness inspection, and had just completed an assault landing at Heavy Beast LZ, Kentucky. Following an engines-running offload, the crew prepared for an assault takeoff and the short flight back to Ft Campbell AAF. Major O'Neil advanced the throttles to maximum power and began the takeoff roll. Takeoff and refusal speeds were both 98 knots, corresponding to one engine inoperative air minimum control speed. As the aircraft reached 80 knots, 1,300 feet down the 3,500 foot dirt runway, the Herk's left wing suddenly dropped and the plane veered abruptly to the left. Observing the runway edge lights rapidly approaching, Major O'Neil immediately pulled the throttles to ground idle and used differential power and differential braking to keep the speeding aircraft on the 60-foot wide assault strip. Quickly identifying the number one engine as having flamed out, Major O'Neil directed that engine be shut down and brought the remaining engines to maximum reverse guiding the C-130 back towards the runway centerline and narrowly missing the runway edge lights. The crew completed the abort procedures, bringing the damaged aircraft to a stop on the dirt runway. The quick, calm and professional actions of Major O'Neil and his crew during this critical phase of flight prevented possible damage to a valuable aircraft and potential injury to the crew. TMF salutes this crew's "Excellence in Airmanship."

Standing left to right: Capt Terry L. Lawson, N; Major David S. O'Neil, AC; 1Lt Michael J. Laski, CP.
Kneeling left to right: SSgt Ronald W. Armstrong, LM; SMSgt David J. Lott, FE; TSgt Robert Stults, LM.

An exercise in airlift employment

by Captain Gale E. Clouse, Jr.
Associate Editor

It was a quiet Sunday in Korea and, as it began, little different from any other. Over most of the country the weather was clear except for an occasional scattered shower. But on that day, June 25, 1950, at 0400, the North Koreans came across the 38th parallel in an all-out offensive against the Republic of Korea (ROK).

Almost 33 years later, on another Sunday, March 13, 1983, a massive military action was once again taking place in Korea, this time 30 miles *south* of the 38th parallel. It was D-day, the start of the employment phase of a massive, JCS-directed, Pacific Command-sponsored, field training exercise known as Team Spirit 83. Airlift, which had played such an important role in that earlier Korean conflict, would once again be needed in the defense of Korea against a simulated attack from the North. As I was to learn from a MAC Korean Airlift Control Center (KALCC) duty controller, "All of MAC is here, and in force!" He was right, for a broad range of MAC units were major players. The enthusiasm from deployed MAC organizations, the Army, Navy, Marines and other Air Force units, and the participating ROK units, was building up. By the end of the exercise, all of the participants would have caught the "spirit."

Osan Bound

MAC deployment operations for Team Spirit 83 began 1 February and continued until 12 March, the day before D-day. During this period MAC flew 325 missions and airlifted over 15,000 troops and 4,850 tons of equipment to Korea on C-141s, C-5s, C-130s and commercial wide-body cargo and passenger aircraft.

The 38 ARRS Jolly Green flight line becomes busy as morning breaks over Osan AB, ROK during Team Spirit 83. Photo by TSgt David N. Craft, USAF.

I flew on one of the C-141 deployment missions with a crew from the 8 MAS. The AC, Major Mike Gurley, and crew carried troops and equipment to the "war" from McChord AFB to Osan AB. Our mission was unique because we flew the 4,800 miles direct, with no refueling stops. Normally, C-141s could never complete the trip westward against the wind. But thanks to SAC and a 22d Air Refueling Squadron KC-135 out of March AFB, we completed the 12.7 hour journey to Korea non-stop. Our refueling flight demonstrated MAC's capability for the rapid deployment of forces in contingencies and exercises worldwide.

Approximately 4 hours after leaving McChord we sighted our KC-135 tanker, Zang 57. We flew aerial refueling track 508 which took us just south of Alaska on our great circle course to Korea. After 22 minutes of refueling and an 83,000 pound on-load, we

had sufficient fuel to reach Korea. We then left Alaskan waters and proceeded on the Northpac North routing which took us within 62 miles of the Soviet-controlled—and defended—Kuril Islands, located just north of Japan. We landed at Osan AB, mid-morning on 10 March. Major Gurley's crew, augmented for this mission, proceeded quickly back to Yokota AB, Japan, after off-loading at Osan.

We're MAC!

Osan AB was a major Team Spirit operating location with many on-going MAC activities. As the airlift unit within the Hardened Tactical Air Control Center (H-TACC), the KALCC was responsible for the command and control and employment of MAC airlift forces in Korea. In the KALCC, the COMALF (commander of airlift forces), Brigadier General Browning C. Wharton, Jr., and his staff directed MAC's daily operations in-theater. Specialists working in the KALCC included current operations, tactics, intelligence, aerial port, safety, command and control, logistics readiness, administration, communications, and combat control team members. The responsibility of the KALCC is to plan the next day's MAC airlift missions and to manage airlift in an ever changing tactical situation.

Rescue operations were also located in the H-TACC in the Korean Combined Rescue Coordination Center (KCRCC). This unit directed the search and rescue exercise (SAREX) held during Team Spirit. Members of the 41st Rescue and Weather Reconnaissance Group (Provisional) manned the KCRCC. This same provisional rescue group, formed for Team Spirit, operated the HC and WC-130s and rescue helicopters from deployed Rescue forces operating in Korea. The 38 ARRS, a MAC CH/HH-3 tenant unit at Osan AB, also supported KCRCC operations.

A MAC Aeromedical Evacuation Control Center (AECC) at Osan served as the command and control element of the tactical aeromedical evacuation system (TAES). The AECC, manned by members of the 1st Aeromedical Evacuation Squadron (AES), Pope AFB, and the 9th AES, Clark AB, ensured that tactical airlift aircraft were made available to meet the Team Spirit air-evac requirements. A mobile aeromedical staging facility (MASF), adjacent to the Osan AB flight line, provided a short-term holding area for air-evac patients prior to their pick-up. The MASF medical flight crews provided nursing care aboard the aeromedically-configured C-130 exercise aircraft.

MAC's Airlift Communications Division provided satellite communications, so vital to making exercise operations flow smoothly. The satellite terminals were used to link Korean locations; the 374th Tactical Airlift Wing, at Clark AB; the 834th Airlift Division, at Hickam AFB; and the 22d Air Force Operations Center, at Travis AFB.

Air Weather Service's deployed weather personnel served throughout Korea, both in the field at drop zones/landing zones, and at major bases. Weather folks from Det 15, 30th Weather Squadron at Osan, provided

AIC David Pickering, 71st ARRS, is hoisted down into simulated hostile area to treat wounds of "downed" Navy pilot, Lt. Ken Bowersox. Photo by Sgt Kim Kuck, HQ AAVS.

Note simulated injuries.

During a Team Spirit search and rescue exercise, a downed pilot radios for rescue assistance. Photo by Sgt Kim Kuck, HQ AAVS.

Navy pilot is assisted during Team Spirit search and rescue exercise.

weather data for all the military users within the H-TACC.

A variety of other MAC specialists supported the exercise. A MAC Persco (Personnel Support for Contingencies) mobile van made its exercise debut at Osan during Team Spirit 83. The van serves as a computerized personnel accounting system and keeps track of up to 36,000 troops during a rapid deployment. In addition to the personnel folks, MAC security police participated in an air base ground defense exercise. The deployed Aerospace Audiovisual Service team operating out of Osan provided documentation of all major exercise events.

Aircrew "Survivor" Insert Mission

On 12 March, I flew an administrative insert mission with the 38 ARRS to support Team Spirit search and rescue activities. Captain Michael Ausserer, aircraft commander, explained that we'd be dropping off eight people at locations north of Osan. These included four aircrew "survivors" who were accompanied either by a PJ or a Fairchild AFB survival school instructor. Their task was to stay overnight in the Korean countryside followed by a helicopter "rescue" the next day. Our biggest flying hazards on the mission were mountainous terrain, congested radio frequencies, uncharted power lines, and heavy Army helicopter traffic in the low-level portions of the exercise area. Since we flew to points just 15 miles south of the 38th parallel, precise navigation was vital.

Operations at Kimhae AB

On D-day, the start of the employment phase, I traveled to Kimhae AB. Kimhae was the location of the MAC airlift C-130 unit for the exercise, the 374 PTAG (Provisional Tactical Airlift Group), and MAC special operations forces flying the MC-130E Combat Talon aircraft.

A large number of the airlift missions flown in and out of Kimhae were in support of the U.S. 25th Infantry Division, which had earlier deployed from Hawaii to Korea, as well as in support of ROK forces. MAC C-130s were scheduled to conduct both airdrop and airland missions. In support of the Army units, the Herks airdropped C-rations and heavy equipment. Airland missions included bladder birds carrying JP-4 to Army locations as well as the Star (Scheduled Tactical Airlift Route) mission. This latter C-130 mission transited all the major Korean exercise locations each day.

At Kimhae I first flew with a crew from the 39 TAS, Pope AFB, on an AWADS (Adverse Weather Aerial Delivery System) 10,000 pound C-rations drop. Major Robert Dalton, our AC, explained that we'd be dropping eight bundles in a container delivery system (CDS) drop. Our first pass over the drop zone resulted in a no-drop due to Army equipment temporarily located on the drop zone. After a couple of racetrack patterns, we were cleared for the drop by the combat

control team. Our navigator, Captain Gary Lambert, made a point of impact (PI) airdrop. A second C-130, flying 15 minutes behind us, also made a PI. The Army, which wouldn't eat the next day without our drops, was, needless to say, quite satisfied with our day's work.

My second airlift mission was a C-130 blood plasma drop on 14 March with a crew from the 21st TAS at Clark AB. The plasma was for use by an Army field hospital that was simulating taking heavy casualties during the war.

A third airlift mission I flew on was a tactical aeromedical evacuation flight. At Kimhae and at Sachon AB, we picked up "simulated" ambulatory and litter patients who were being transported for further medical treatment at definitive care facilities. Our medical crew was busy during the entire flight monitoring patient status and providing medical care. Earlier, 1 AES medical technicians had helped configure the aircraft for medical evacuation and helped onload the patients.

In addition to rescue, airlift and aeromedical evacuation flights, I also flew a mission with one of MAC's newest units, the 1st Special Operations Squadron (SOS) from Clark AB. Since the 1 SOS had become a part of MAC on 1 March, just days before the beginning of the employment phase, my presence as a MAC auxiliary crewmember aboard a special operations mission was as new to them as their mission was to me.

The Combat Talon MC-130E was "a little different" from other C-130s I had flown. Its reinforced tail structure and special avionics equipment marked it as something special. Equipped with Omega, inertial, doppler, X and Ka band radar, and terrain following radar, the Combat Talon possessed particularly impressive and "unique" navigation capabilities.

Medical personnel wearing chemical warfare gear load patients on a 374 TAW C-130 deployed in Korea. Photo by SSgt John M. Collins.

Our predeparture aircrew briefing was one of the most thorough I had heard covering the route, the missile and electronic warfare threats to our aircraft and the activities planned for each phase of flight. Our 0200 departure from Osan was routine for 1st SOS crews, who are very familiar with night operations. Activities that night consisted of a low-level paradrop of two combat control team members, an unannounced combat assault landing and a leaflet drop. After all our scheduled events were completed, precisely on time, we recovered back to Kimhae.

Conclusion

MAC's participation in Team Spirit 83 was multi-faceted, reflecting the growing scope of our airlift, aeromedical, rescue and special operations capabilities. It was a learning experience for all of us. As General Wharton put it: "Team Spirit 83 was the best in the Korean exercise series to date. Besides thoroughly challenging all participants in a realistic training environment, the exercise was notable for new initiatives. For the first time we exercised effective theater command and control of both strategic and tactical missions, demonstrated the C-141 IMC airdrop capability, and proved we could resupply an army on the move under all weather conditions. However, the most satisfying aspect of the entire exercise was the dedication and professionalism displayed by all members of the MAC team. Once again, the troops made the difficult appear routine."

The North Korean invasion 33 years ago was concluded with an armistice and an unsteady peace. Our training in Team Spirit 83 prepared us for any future aggression in Korea and for other contingencies worldwide where airlift would be needed. *TMF* salutes all the Team Spirit 83 participants, who not only proved our capacity to defend Korea, but performed the task safely.

Flying-Hour Milestones

Col Earl E. Fairchild, Jr., 932 AAG/CC
Lt Col David A. Fiegel, 1551 FTS
MSgt Robert Galarneau, 8 MAS
MSgt Michael S. Thomas, 57 MAS

Brig Gen David S. Taylor,
Asst Adj Gen, W.Va ANG
Col Dan W. Freeman, 314 TAW/CC
Col Frank J. Moore, 914 TAG/CV
Lt Col John R. Bowse, 50 TAS
Lt Col David M. Cordera, 8 MAS
Lt Col John J. Foncannon, 50 TAS
Lt Col Robert L. Frazier, 61 TAS
Lt Col Paul E. Kressin, 36 TAS
Lt Col Michael J. Quarnaccio, 433 TAW
Lt Col Rolf A. Wehr, Jr., 73 AAS
Maj James S. Doornbos, 57 MAS
Maj William E. Evans, 130 TAG
Maj Brian J. Fritsch, 39 TAS
Maj William E. Gutermuth, 758 TAG
Maj Thomas G. Hargis, 328 TAS
Maj William D. Peters, Jr., 130 TAG
Maj Robert J. Pucik, 50 TAS
Maj Roger J. Purcell, 7 MAS
Maj Kenneth O. Reinhard, 38 ARRS
Maj David H. Smith, 337 TAS
Capt George V. Ellis, Jr., 708 MAS

Capt Ronald G. Hahn, 55 ARRS
Capt David J. Lykens, Det 8, 37 ARRS
Capt Gary R. McCurdy, 40 ARRS
Capt Stephen M. Roark, 31 ARRS

Ranks and units are those at time of awards. See MACR 900-3 for details on how to apply for your own milestone award.

C.R. TERROR

A July 4th "Save" for the Patriotic Pilot.

The silence in the squadron at 1630 on Friday, July 1st, was eerie as MAC's most senior major headed for the door.

"Uh, Major, could I see you for a minute?" The halting voice of the beleaguered pilot scheduler, Captain Fred "you're-the-only-one-available" Gray, matched his slight frame. Following the diminutive, balding captain into the scheduling office, C.R. was thinking of the 3-day weekend ahead.

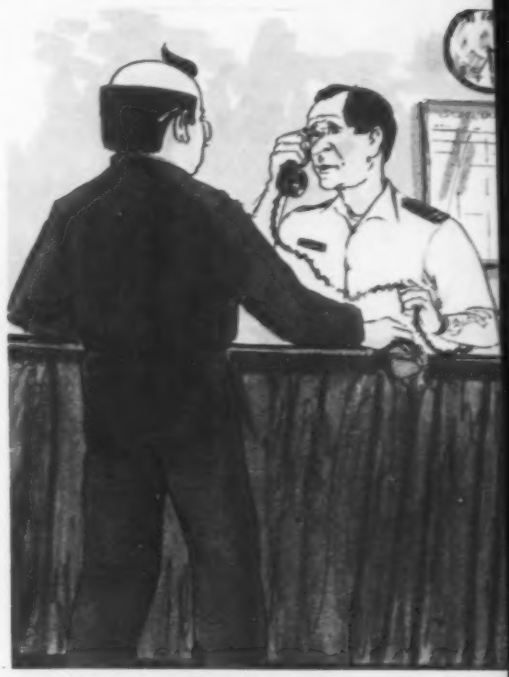
"Let's see. Camper, cooler, food, ice, olives, portable potables...must be something I'm forgetting. Ah, yes. Tassels! How could I forget?" He continued to run his Three-Day-Weekend checklist silently. But the voice of the scheduler brought C.R. back to reality with a start.

"Uh, sir. I'm afraid I have some bad news for you," Gray began, looking at the floor and twisting the frayed phone cord in his fingers. "It seems the ops officer needs one more person to man the squadron booth at the base open house on July 4th. He told me to sign you up ASAP since you hadn't taken leave yet. The scheduler handed the stunned major a mimeographed schedule of events. "You have the 9 to 3 shift—service dress uniform. Thanks for helping me out."

Noting the flush on C.R.'s neck and cheeks, the wily scheduler edged towards the door, all the time apologizing to the now-seething field grader. Ducking into the flight engineers' office down the hall, he quickly picked up the phone and dialed. "Hi, it's me. I got one of the majors to cover for me at the open house. Pack the coolers and round up the kids. I'll be home in 15 minutes and we can be at the campground by 6." He hung up the phone and grinned as the long-awaited explosion erupted in the pilots' office.

"Open house? You want *me* to work at the squadron booth at open house? You gotta be crazy!" The Apoplectic Aviator was screaming now. "Where's that low-rent excuse for a scheduler?" Nearly incoherent with rage, C.R. suddenly realized nobody was listening, because nobody was in the squadron. He'd been had by the world's most devious scheduler at the last minute on a Friday afternoon preceeding a 3-day-weekend, and there was nothing he could do about it.

Realizing his plight was hopeless and his weekend at Nature Acres Sunbathing Emporium ruined, C.R. plotted his revenge. Knowing proper revenge would take weeks of planning, he strode purposefully to the magnetic scheduling board and gave it a tremendous shot with his forearm. As he exited the



squadron seconds later, the Semi-satisfied Field Grader could still hear the magnetic name tags and mission setups hitting the floor. "Bet that'll take Gray a few hours to unravel," he muttered as he approached his dilapidated British racing green Jag. His shoulders sagged further, though, as he surveyed the acres of empty asphalt around him. He was literally the last one left on base, it seemed.

Tassels was, surprisingly, quite understanding. After the Meek Major had explained that their weekend was ruined, Tassels cheerfully informed him she was

going to visit her sister Gigi in Illinois.

A short time later C.R. Terror, Taxi-driver Extraordinaire, deposited Tassels at the airline check-in counter. He waved disconsolately as she smiled and disappeared into the sleek Martin 404. "Lotta fun this weekend's gonna be. Hope Gray sits in some poison oak," he mumbled, still unaware of the quick switch pulled on him earlier. "Might as well go home and read the regs and the Huey Dash-1. Probably the most fun I'll have all weekend." He wedged his squatty body into the Jag and moodily drove home.

The Fourth of July dawned bright and clear, promising a gorgeous day ahead. The Fully-informed Flyboy pushed the stack of regulations and tech orders away from his bed and glowered through the blinds. "Service dress uniform on a hot summer day on the ramp," he growled. "Talk about a sauna! Sure wish I was floating in my custom-made white inner tube in the pond at Nature Acres." But, reluctantly facing reality, he arose and dressed himself in his custom-tailored, hand-made blues. "Not bad for a senior major!" he exclaimed as he looked into the mirror. "The blues really look pretty spiffy. If I have to be at the open house I may as well dazzle all the folks with my ribbons and my sterling-silver command pilot wings." For the first time in 3 days the Magnificent Major's mood improved.

Even 4 hours under the broiling sun didn't dampen C.R.'s spirit. "Maybe it's the Thunderbirds and their shiny F-16s, or maybe it's all the flags and uniforms," he mused, pouring himself another *free* glass of the squadron's lemonade slush, "but, I feel like I *really* belong here today. A weekend in the books capped by my willing participation at the wing's open house. Why maybe I can get this year's OER all the way to the DO!" He smiled and resumed answering the endless questions of the kids in front of the booth. But his joyful, patriotic mood was suddenly shattered when the ops officer ran up to the squadron booth, obviously highly upset.

"Terror, thank goodness you're here! I just got word that Captain Gray's little boy, Billy, was bitten by a rattlesnake out at Nature Acres. The sheriff says the traffic's backed up for miles and if we don't medevac him by helicopter, he may not make it! C'mon! I got Sam to be your copilot and he and Sergeant Torque are already preflighting the helicopter. The medical team will meet you at the chopper. How soon can you get airborne?" The worried colonel breathed easier as C.R. confidently flagged down a follow-me truck and instructed the driver to head for the DV parking lot and then on to the waiting Huey.

Arriving at his dusty Jag, C.R. snatched his helmet bag and pubs kit out of the seat and vaulted into the back of the waiting pickup. By the time they screeched to a stop in front of the helicopter, C.R. had slipped his nomex flight suit over his uniform and had his checklist in hand.

"Sammy, have you got the walkaround completed?" he shouted to his trusty copilot as he carefully unfolded his local area map and arranged his equipment in the cockpit. Receiving an affirmative from his young assistant, C.R. continued. "Let's get strapped in, get our clear-

ance and run the checklists. That way when the medical team arrives we'll be ready to go."

Sammy was incredulous. Never before had he seen the Ace of Autorotation so calm and so obviously well-prepared. Impressed, he quickly strapped himself into the left seat and soon completed the checklists. Seconds later a blue Air Force ambulance slid to a stop nearby and a worried medical crew sprinted to the helicopter with their equipment.

Hurrying, yet uncharacteristically in control of the situation, C.R. soon had the Huey's twin turbines fired up and was cleared for an emergency departure to the east. "Checklists complete, co-pilot?" he queried on interphone as he skillfully brought the Huey to a low hover.

"Checklists complete. Cleared for takeoff, Boss," Sammy quickly replied. Nose down, the Huey accelerated straight ahead under C.R.'s deft control and was soon level at 500 feet above the ground, streaking for Nature Acres.

"How'd you know where to go, Boss?" Sammy finally ventured as he realized the Master Map-reader knew exactly where he was headed. "We've never flown out this way before."

"It's a long story, Sammy," C.R replied with a hint of a smile. Revenge was now a thing of the past. "I'll explain the whole thing once we get our patient safely to the hospital. We'll be at Nature Acres in 2 minutes. Medical crew, you all set?"

C.R. quickly located the crudely marked landing site, a parking area surrounded by tall trees, and soon had the Huey on final approach.

"Careful of wind shear, Boss," the always competent copilot warned. "We might have a problem when we descend below the tree tops."

"Correctamundo, Sammy m'lad! But if you'll notice, I'm well aware of the wind shear danger and am flying this approach just like the Dash-1 suggests." As C.R. deftly brought the Huey to a hover, he spotted an ashen-faced Captain Gray holding the limp form of his son in his arms. Seconds later, C.R. had the rescue chopper on the ground, and Max and the medical crew were racing towards the stricken child. After a quick examination and some on-scene emergency medical treatment, the team headed back to the waiting chopper, the small boy safe in Max's arms.

While Max ensured everyone was properly strapped in, Sam and C.R. reviewed the checklist and prepared for takeoff. Everyone secure, the Huey Honcho added power and gently lifted the chopper into the air. Once above the treetops, he smoothly transitioned to forward flight and soon had the chopper speeding on its return flight to the hospital as the medical crew treated their young patient.

Approaching the base, the Ace of ARRS even took time to brief the visual approach to the helipad, something he had ignored for years.

As the medevac chopper slowed for landing, the pilots were relieved to see the white-uniformed hospital personnel anxiously awaiting the arrival of the little boy. With a skill he had forgotton he possessed, C.R. gently placed the Huey's skids squarely on the red cross in the middle of the helipad. Max quickly opened the helicopter's door and helped transfer the child to the waiting doctors and nurses. Their part in the rescue complete, C.R. and his crew took off and headed for the parking spot.

The short hop to the flight line was thoroughly anticlimactic, but still flown with the same skill and professionalism as the rest of the mission. Everything returned to normal, though, as C.R. spotted the rows of Air Force-blue sedans and matching blue-suited officers surrounding their parking spot. But something was different. All the colonels were smiling!

As the Rotund Rescuer supervised the completion of the checklists, he was proud of himself. For once he had been properly prepared, and when a life or death situation arose, he had performed to perfection.

Colonel Fang led the group approaching the Huey. He stopped, looked C.R. straight in the eye and held out his hand. "Good job major—real good job. The hospital just called and said the boy is out of danger. Thanks to you and your crew, we saved a little boy's life today. How about you and your crew joining me on the reviewing stand for the fireworks display? It should be starting any time now!"

As the first rocket filled the evening sky with a spectacular red flash, C.R. smiled. It had been, he recollected, an Independence Day worth remembering. ✦

Quick Stoppers

Strange, Stray Electrons

Here's one for the books. A CT-39 was winging its way toward its destination about 30 minutes after takeoff when the tacan failed. Almost simultaneously, the interphone and right-side comm transmitters followed suit along with the copilot's compass card. Stranger still, when the pilot pressed his yoke mike button, the gear unlocked and showed "in transit!" The now fully confused crew diverted to a nearby Sabreliner base and carefully, very carefully put their miniliner on the ground.

The list of bugs the wrench-benders found included some defective wiring on the pilots' hand microphones and headset cords, loose wires between the bus jumper and tacan, and abnormally high resistance in the tacan circuit breakers. The final "glitch" was a broken gear load switch. Thankfully, this particular CT-39 hasn't incurred any similar write-ups since this episode.

Bogged-Down Herk

This one comes under the heading of "almost well done." It seems the steely-eyed crew of the Lockheed Legend sees the number 4 engine oil pressure dropping approximately 20 psi. "Shut it down," commands the AC. The number 4 prop is caged, and the crew proceeds back to home station, declares an in-flight emergency and generally does everything you would expect. Until, that is, this Herk lands.

As those of us who have flown the brown-and-green machine know, there is a warning in the Dash-1 worded something like, "...if the throttles are brought below flight idle at high airspeed (approximately 100 KIAS or greater), a power loss/bog down could occur...." As the pilot recalls, he slowed the turboprop to about 110 KIAS and brought the three remaining throttles over the gate into the ground idle range. He then reversed numbers two and three, and three, as advertised, bogged down then flamed out. The engineer called the crew's attention to the malady, and number three was also shut down. No further incidents.

Now, as in similar incidents, there's more to the cause than meets the eye. Number 4 engine was shut down for a malfunctioning engine oil transmitter which gave the crew the erroneous readings. Number 3 flamed out, on the other hand, due to a combination of poor throttle technique—reversing above 100 KIAS—and a clogged fuel heater strainer. While we all know a T-56 shouldn't flame out or bog down at these speeds, combine a case of improper technique with another glitch and you have the makings for some very unexpected happenings. And let's face it, how many of us routinely check the fuel strainer heater for contamination?

Ear Blocked Load

Ah, European rotation! New scenes, new sights, but the same old hazards, including flying with the proverbial common cold. In flight, a Herk loadmaster suffered the usual symptoms, one of the more pronounced being plugged ears. As the C-130 was inbound to a German offload point, the "door open" light illuminated and our "rote" crew descended to FL 100 while accomplishing the prescribed checklist actions. The light went out, but our loadmaster, one of two, developed a headache on the descent. (Can you see what's coming up next?) The crew landed without incident, and the head-aching load was advised by the primary loadmaster to "take it easy."

Off again and about 20 minutes into the flight back to the TDY homedrome, the cold-suffering load passed out and hit the floor. Oxygen was administered and the unconscious load quickly regained consciousness. In fact, by the time the Herk landed, his headache was nearly gone! But, he was taken to the local flight surgeon, anyway. A thorough examination revealed the cause of this fainting episode. Seemed the loadmaster suffered an earblock inflight and when the Herk had to depressurize because of the "door open" light, the earblock intensified and caused the headache. Next, the severe pain caused the loadmaster to faint, the last straw in this physiological incident.

Same Song, Second Verse

Winging along at FL 350 and about an hour into a C-9 flight, an inflight passenger specialist ate breakfast and went to sleep. He awoke some time later, stood up quickly and walked toward the latrine. Then, "it" hit him. He suddenly felt dizzy, fainted and fell over backward. About 2 minutes after being given oxygen, he, too, regained consciousness. Upon landing, he was taken to a dispensary and given the "once over."

Seems he was on a vigorous physical exercise program including running, sit-ups and push-ups. The dispensary personnel concluded that inadequate fluid intake coupled with a history of mild motion sickness contributed to the incident. Dizziness, fainting and the like are sometimes insidious in their onset, but all are dramatic in the final outcome. Physiological episodes can be caused by any of a hundred and one things. Know your symptoms, stay fit and stay alert.

Brute-Force Disconnect

Witness the first contact during A/R upgrade training. The student attempted to correct back to the center position from one of 8° right, 9 feet extension and 34° elevation. The IP immediately recognized an overcorrection, pressed the disconnect switch and saw the light illuminate. The boom, however, didn't retract and the aircraft continued tracking left. As the stretched Starlifter reached a point approximately 5° left, the boomer attempted to disconnect but, again, the boom stayed solidly in the receptacle. At about 9° left azimuth, the boom operator commanded a breakaway. The C-141 crew did so IAW all procedures and finally pulled away from the reluctant-to-retract boom. The result: a brute force disconnect.

What's Behind the Green Door?

Shortly after takeoff, one of the loadmasters was conducting a routine walkaround in the cargo compartment of the C-141B when he noted the unmistakable odor of gasoline. A quick check showed the gas was leaking from an M-104 single-axle trailer which was securely closed with a padlock. When the cover of the trailer was finally removed (after prying off the stubborn lock), the Starlifter crew was amazed to find five 5-gallon jerry cans of gasoline which had been placed in the trailer and left unsecured. During the takeoff the cans tipped over and spilled between 3 and 5 gallons of their flammable contents. The crew removed the cans from the trailer and secured them to the floor, then cleaned up the spilled fuel with vermiculite from the protective clothing kit. Needless to say, this crew made sure the shipper was *thoroughly* briefed on the proper procedures for packing and documenting hazardous materials for air shipment.

Notable Quote

Approach Control:
We have the REIL lights up all the way. Do you have the runway in sight?

Pilot (after some hesitation):
How do you tell the difference between real lights and imitation lights?

—Courtesy: NASA ASRS *Callback*

After Deadlines

15th ANNUAL AIRLIFT ASSOCIATION NATIONAL CONVENTION will be held 21-23 October 1983 at the Chase Park Plaza Hotel, in St. Louis. The theme of the convention is "Enhancing Airlift: Decisions for Today." Registration fee is $80 per person, or $65 prior to 20 September. Partial registration for Saturday, 22 October is $50 per person, or $45 prior to 20 September. Airline discounts are available for attendees. For registration materials, write: Airlift Association Convention, P.O. Box 193, Scott AFB, IL, 62225. Address hotel registration inquiries to the Chase Park Plaza Hotel, 212 North Kingshighway, St. Louis, MO, 63108, or call (314) 361-2500. Toll-free outside Missouri, 1-800-325-4933. The Convention Project Officer is Major Dennis Murphy, 375 AAW/DOX, Scott AFB, IL, 62225. Permissive TDY is authorized for this event with the approval of your commander.

LOCKHEED-GEORGIA HAS DONATED THE FIRST FOUR-ENGINE JETSTAR prototype to Andrews AFB, Md. Once restored, the JetStar will be mounted on a pedestal in front of the newly remodeled passenger terminal. This particular prototype was the first JetStar converted from a two-engine to a four-engine aircraft, and made its first flight in March 1960. A ceremony is planned on 27 August at Andrews to commemorate the JetStar for its performance to the nation in transporting senior government officials of this and other countries. Information courtesy Lockheed-Georgia.

C-130 WEAPON SYSTEM TRAINER (WST) is now in full operation training pilots, navigators and flight engineers at Little Rock AFB. The WST rides on a sophisticated motion platform, has a day/dusk/night wraparound visual system and fully functioning avionics. Crews can safely and realistically practice normal and emergency procedures, malfunctions and even combat tactics without risking life, limb and plane. Crews can also practice airdrops, LAPES and assault landings. The WST has also proven valuable in accident investigations. Information courtesy 34th TATG/TTX.

WANTED: PRIOR TACTICAL INSTRUCTORS AND FLIGHT EXAMINERS—With the consolidation of MAC SOLL II assets at Pope and Charleston AFBs nearing completion, there are openings for former C-130 and C-141 instructors and flight examiners. SOLL II requires highly qualified, skilled and experienced crewmembers for these openings. If you are interested, contact Capt Mike Daggitt (Strat Airlift) at AV 638-4874, or Capt Larry Harris (Tac Airlift) at AV 638-2267. Information courtesy HQ MAC/DPRO.

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